〔Chem. Pharm. Bull., **40**, 235-237 (1992)〕 [Lab. of Medicinal Chemistry]

Facile Unmasking of Ethenylated Isocytosines *via* Diacetoxylation with Lead Tetraacetate.

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Treatment of ethenylated isocytosines, imidazolo[1,2-*a*]pyrimidine-5(1*H*)-one (**1**) and -7(8*H*)-one, with lead tetraacetate (LTA) in glacial acetic acid followed by alkali hydrolysis resulted in the smooth removal of the ethenyl group to give isocytosine (**2**) in high yields. The unmasking of (**1**) by LTA to (**2**) was compared with the results using iodosylbenzene diacetate and *N*-bromosuccinimide. The present results provided a basis for the utilization of the ethenyl group as a protecting group of the amidine and guanidine moieties in biologically important substances.

〔J. Chem. Soc., Perkin Trans. **1**, 1801-1805 (1992)〕 [Lab. of Medicinal Chemistry]

N^6-Substituent Effect on the Photooxidation of 2',3'-*O*-Isopropylideneadenosines with a Pyrimido[5,4-*g*]pteridinetetraone *N*-Oxide. Chemical Evidence for the Generation and Reactivity of Adenosyl Cation Radicals.

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A comparative study on the photooxidation of 2',3'-*O*-isopropylideneadenosine (**1a**) and its N^6-benzoyl, N^6-monomethyl, N^6,N^6-dimethyl derivatives, (**1b-d**), with a pyrimido[5,4-*g*]pteridinetetraone *N*-oxide (PPO) was carried out. The ease of photooxidative consumption of the adenosines by the PPO is in order of (**1d**) >(**1c**)>(**1a**)>(**1b**), which is parallel to their oxidation-peak potentials. The occurrence of the oxidative 5'-*O*,8-cyclization in (**1a, b**) and of the exclusive oxidation at the N^6-methyl group in (**1c, d**) under the conditions provide chemical evidence for the generation and reactivity of adenosine cation radicals.

〔Chem. Pharm. Bull., **40**, 1656-1658 (1992)〕 [Lab. of Medicinal Chemistry]

A Newly Devised Method for the Oxidative Unmasking of 1,N^6-Ethenoadenosines : Facile Conversion of Adenosine into 2-Deuterated Adenosine.

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2-Deuterated adenosine was conveniently prepared from adenosine (**1**) by applying the ring-fission and reclosure methodology of 1,N^6-ethenoadenosine and a new oxidative unmasking method of the etheno moiety. The present methodology promises to be applicable to the chemical modification of (**1**) and its derivatives in a wide scope.